AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Figure 2.

Attachment: 1 Replacement sheet for Figure 2

REMARKS

Claims 1 and 6 have been cancelled, claims 2-5 and 7-8 are amended and claims 9-11 are presented for consideration herein, with claims 2-5 and 7-11 currently pending.

Drawings

The drawing figures have been amended to address the comments set forth at page 2 of the Office Action, by renumbering one of the instances 210, and by removing the acronym TARID. However, Figure 7 has not been annotated as "Prior Art", as suggested by the Office Action. Applicants respectfully note that nothing in the specification indicates that the software code that is shown in this drawing figure is prior art. Withdrawal of the objections to the drawings is respectfully requested.

Substitute Specification

Upon review of the application, it was noted that some discussion of embodiments of the invention is included in the Background section of the originally filed patent application. For clarity, the application has been revised to relocate this language into the Detailed Description section of the patent application.

Information Disclosure Statement

Applicants have submitted an Information Disclosure Statement with copies of 5 of the 6 documents requested by the Examiner at page 2 of the Office Action, together with additional documents for the Examiner's consideration. The *O'Neal* document requested at page 2 of the Office Action has markings indicating it is not publicly releasable and may contain classified material, and has therefore not been submitted.

Allowable claims

Page 5 of the Office Action indicates that Claim 6 is directed to allowable subject matter. claim 6 has been canceled, and Claim 5 has been rewritten in independent form to include the features of claim 1 and claim 6. Some original language regarding "collecting a video sequence of images from a sensor" is not believed to be necessary to patentability and has been deleted from the claim. Claim 6 is believed to be in condition for allowance. Claim 7 has been amended to depend from claim 6.

35 U.S.C. § 112, second paragraph

Page 2 of the Office Action set forth rejections of claims 3 and 4 under 35 U.S.C. § 112, second paragraph, noting several antecedent basis issues and requesting clarification of some claim language. Applicants have amended claims 3 and 4 to address each of these issues.

Several claims have been amended to address minor informalities and to place the claims in better form.

Rejections under 35 U.S.C. § 102 and § 103

Pages 3 and 4 of the Office Action rejected independent claims 1 and 8, and dependent claims 2, 4, and 5 under 35 U.S.C. § 102(a) based on the disclosure of Rumo, "Superresolution in images using optical flow and irregular sampling". Claims 3 and 7 were rejected under 35 U.S.C. § 103 based on the disclosure of Rumo in combination with admitted prior art from the present patent application.

Claim 4 has been written in independent form and is believed to be allowable over Rumo for the following reasons.

Claim 4 recites, among other features, a step of "estimating motion associated with said video sequence of images" and "said estimating motion associated with said video sequence includes associating with each pixel a pixel intensity, an X-coordinate location, a Y-coordinate location, an X-coordinate estimate uncertainty, and a Y-coordinate estimate uncertainty".

The Office Action points to the language at page 4 of Rumo, "Now each point is associated with a weight of likelihood" as corresponding to this feature of claim 4. Applicants respectfully disagree.

This section of Rumo (section 3.4) is concerned with the reconstruction of images from a sequence of images, not with a step of estimating motion associated with a video sequence of images. In particular, Rumo section 3.4 "Weighted average diffusion" discloses that weighted likelihoods are applied to points for the purpose of filling in the empty pixels in the skeleton of an expanded size through interpolation. This step in Rumo is accomplished after the estimate of pixel shift and subpixel shift discussed in section 2.1 and 2.2. See page 2 of Rumo, immediately after the heading "3. Reconstruction", stating "Once we get the estimate shift for all images, we can move to the reconstruction phase", and then describes the weighted average diffusion method. Thus, there is no disclosure in Rumo that the weighted likelihoods are used to estimate motion at all, much less to estimate motion of a video sequence of images. To the extent that Rumo's weighted likelihood could be considered to correspond to the X and Y coordinate estimate uncertainty (an assertion with which Applicants disagree), Rumo fails to disclose the claimed features of "estimating motion associated with said video sequence of images" wherein "said estimating motion associated with said video sequence includes associating with each pixel a pixel intensity, an X-coordinate location, a Y-coordinate location, an X-coordinate estimate uncertainty, and a Y-coordinate estimate uncertainty".

Claim 4 has also been amended to clarify that the step of "assembling said sequence of images to form a single composite image" is "based on estimated positions of individual pixels and estimated uncertainties of the estimated positions".

For at least these reasons, Applicant respectfully requests withdrawal of the rejection of claim 4 under 35 U.S.C. § 102.

Claims 2 and 7 have been amended to depend from claim 4, and claim 3 has been amended to depend from claim 2. These claims are believed to be allowable for at least the reasons Claim 4 is allowable.

Claim 8 has been amended to include the features also set forth in claim 4 "said estimating motion associated with said video sequence includes associating with each pixel a pixel intensity, an X-coordinate location, a Y-coordinate location, an X-coordinate estimate uncertainty, and a Y-coordinate estimate uncertainty". Claim 8 is therefore believed to be allowable for at least the same reasons Claim 4 is allowable.
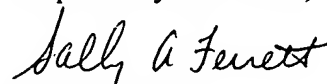
New claims

New claims 9, 10, and 11 are presented to set forth additional subject matter to which Applicant is believed to be entitled, with features not found in the cited references. No new matter has been presented. Support for claim 10 is found at least at pages 1 and 2 of the originally filed patent application, and support for claims 9 and 11 is found at least at page 17 of the originally filed patent application.

In view of the above amendment, applicant believes the pending application is in condition for allowance. Should the Examine have any questions about this Amendment, or any other issues related to this patent application, he is cordially invited to contact the undersigned at the number listed below.

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Registration No.: 46,325

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Respectfully submitted,

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